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that he does not think such a coincidence has been noticed elsewhere. At any rate it has not been so absolutely established heretofore.

Transitional states of the characteristic, if they may be so called, are also seen in the Rouge River mound; that is, instances in which the communication between the fossæ is not quite completed, the dividing wall being reduced, in some cases to a very thin partition, almost transparent. Even where the perforation is accomplished, there is a great variation in the size of the aperture. — HENRY GILLMAN, *Detroit*, *Michigan.*

MICROSCOPY.

ATLAS DER DIATOMACEEN KUNDE.—By Adolf Schmidt, assisted by Gründler, Grunow, Janesch, Weissflog and Witt. Publishing in parts, each with four plates. To be completed in from twenty-five to thirty parts. Three parts of this magnificent work have been received. Each plate contains from fifteen to forty figures. The plates are from photographs of original drawings, reproduced by some one of the processes for copying photographs. It is said that nine thousand drawings have been prepared for the work. Size of the plates, fourteen by nine and one-half inches.

It seems to be the aim of the editors to give every known variation of each species of Diatom. For example, plate seven has forty variations of the type *Navicula Smithii* Breb. = *N. elliptica* W. S. Other genera and species are treated in the same manner. Two plates with eighty-nine figures are devoted entirely to the panduriform Navicula. The editors are the most renowned students of this department of natural history in Germany, and the work will be indispensable to all workers in this country, to whom the writings of the German diatomists have been almost inaccessible, scattered as they are among the German periodicals, while for the bibliomaniac it will supply one of the great books of the age. — C. S.

MEASUREMENT OF MÖLLER'S PROBE PLATTE.[1] — *Mr. A. F. Dod*, *Secretary of the Memphis Microscopical Society*, *Memphis*, *Tennessee. Dear Sir:* I have this day finished the measurement of your probe-platte, No. 586. The first thirteen were measured on the evening of March twenty-ninth, by lamp-light; the rest were measured, and the thirteenth was remeasured this morning by sunlight. A heliostat was used to give a steady beam of light, and blue glass to make it monochromatic. The index error of the cobweb micrometer was redetermined for the occasion; three observations gave $\frac{9}{97}$, $\frac{9}{96}$, $\frac{9}{96}$, revolutions respectively. This correction was applied in all the calculations. All measurements were repeated; all the striæ measured were counted at least twice. In the first five diatoms, as is well known, the striæ are not of uniform fineness all over the surface of the frustule; in these, one of the measurements is made at the *coarsest* striation which was noticed on the frustule; and another was made on the *same striæ*, but at the point where they converge nearest to each other. Care was taken not to be deceived by spectral lines. An immersion sixteenth, by Tolles, having a maximum angle of 178 degrees, was used in all the measurements:

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[1] Read before the Memphis Microscopical Society, April 15, 1875.

1.	Triceratium favus,	6 counted	3.63 in 1-1000 inch.
2.	“ “	5 “	3.76 “ “ “
3.	Pinnularia nobilis,	16 “	13.1 “ “ “
4.	“ “	15 “	12.4 “ “ “
5.	Navicula lyra,	23 “	17.1 “ “ “
6.	“ “	20 “	15.2 “ “ “
7.	“ “	21 “	16.6 “ “ “
8.	“ “	32 “	25.1 “ “ “
9.	“ “	26 “	23.9 “ “ “
10.	Pinnularia interrupta,	18 “	26.7 “ “ “
11.	“ “	17 “	25.1 “ “ “
12.	Stauroneis phoenicenteron,	32 “	34.6 “ “ “
13.	“ “	32 “	34.5 “ “ “
14.	Grammatophora marina,	38 “	38.4 “ “ “
15.	“ “	27 “	38.4 “ “ “
16.	Pleurosigma balticum,	37 “	33.1 “ “ “
17.	“ “	33 “	33.1 “ “ “
18.	Pleurosigma acuminatum,	40 “	46.3 “ “ “
19.	“ “	25 “	46.6 “ “ “
20.	Nitschia amphioxys,	34 “	49.2 “ “ “
21.	“ “	28 “	49.3 “ “ “
22.	Pleurosigma angulatum,	28 “	46.8 “ “ “
23.	“ “	24 “	47.1 “ “ “
24.	Grammatophora oceanica,	39 “	61.5 “ “ “
25.	“ “	27 “	61.9 “ “ “
26.	Surirella gemma; transverse striæ,	45 “	53.2 “ “ “
27.	“ “	35 “	52.8 “ “ “
28.	“ “	35 “	54.6 “ “ “
29.	“ “	34 “	53.0 “ “ “
30.	“ “	21 “	53 8 “ “ “
31.	“ “	21 “	53.8 “ “ “
32.	Nitschia sigmoidea,	37 “	61.9 “ “ “
33.	“ “	41 “	62.0 “ “ “
34.	“ “	49 “	62.5 “ “ “
35.	Pleurosigma fasciola,	20 “	57.8 “ “ “

36.	Pleurosigma fasciola,	17	counted	58.2	in	1-1000	inch.
37.	Surirella gemma; longitudinal striæ,	22	"	66.9	"	"	"
38.	" "	13	"	67.3	"	"	"
39.	Cymatipleura elliptica,	34	"	63.0	"	"	"
40.	" "	38	"	63.1	"	"	"
41.	Navicula crassinervis,	31	"	86.2	"	"	"
42.	" "	22	"	86.2	"	"	"
43.	Nitschia curvula,	29	"	90.1	"	"	"
44.	" "	26	"	89.8	"	"	"
45.	Amphipleura pellucida,	30	"	93.4	"	"	"
46.	" "	17	"	96.1	"	"	"
47.	" "	23	"	96.0	"	"	"
48.	" "	27	"	95.3	"	"	"

In case you should at any time require it, I can specify more in detail what part of each frustule was subjected to measurement. I have given all the observations in order that by comparing them, you may see, in the case of the coarse diatoms which are very easy to measure, the amount of variation in coarseness on the same frustule; and, in case of the finer, which more easily admit of some error in measurement, the degree of accuracy shown by the accordance of different observations.

It is not till I shall have measured several copies of Moeller's probe-platte, that it will be proper or worth while to make any detailed comparisons of the results. It may, however, be remarked that the two specimens of *T. favus* differ as much as nineteen or twenty per cent. Two vary from fifteen to twenty per cent; two vary from ten to fifteen per cent; six vary from five to ten per cent; ten vary less than five per cent; as compared with my probe-platte. The average variation between the measurements of the corresponding diatoms of the two plates is six and nine-tenths per cent; the average of all the variations shows your platte to have its frustules five per cent. finer than mine. The samples of *Amphipleura pellucida* on the two plates agree within three and two-tenths per cent.— *Very truly yours*, EDWARD W. MORLEY, *Hudson*, *O.*, *April* 10, 1875.

AMERICAN ASSOCIATION.—A full representation of those interested in the microscope is especially desirable at the Detroit meeting of the A. A. A. S., commencing on the 11th of next August, as it is desired to take steps toward the organization of a Microscopical Society, either as a separate society or club, or as a subsection of the large Association. There is a very general desire for a society of American microscopists, and it is believed that such a society can obtain general attendance from the whole country only at the time and place of meeting of the A. A. A. S., to say nothing of the other very great advantages of meeting in connection with that prominent organization.

NOTES.

THE Boston Daily Advertiser, in a recent criticism on the "Statement of the Theory of Education in the United States of America," a pamphlet issued by the Bureau of Education in Washington, offers the following forcible remarks, which illustrate very fairly how favorably the educational ideas of our best scientific men are received by the intelligent part of the community:

"Another point hinted at by the pamphlet is the excessive regard paid to the text-book. The general system of instruction lays special emphasis on the use of text-books, and the prevalent tendency is toward giving the pupil an initiation into the method of using the printed page in the form of books and periodicals for the purpose of obtaining information from the recorded experience of his fellow-men, but in many schools and systems of schools, equal or greater stress is laid upon the practical method of conducting investigations for the purpose of verification and of original discovery. We presume that the last clause, though rather obscure, points at object lessons, field study and the use of the laboratory, but the words employed elsewhere, "the prevailing custom in American schools is to place a book in the hands of the child when he first enters school, and to begin his instruction with teaching him how to read," sufficiently express the fundamental notion of practical education as it prevails in America. The omission, on the one hand, of a public Kindergarten as initiatory, and the close succession of text-books in every department of study, expose one evil in our system which is not likely to be eradicated by any formal enactment or introduction of new systems, but only by the gradual emancipation of the human mind from its present subjection to the printing-press. The extent to which the present system is carried is appalling when we consider it fairly. The teacher is in danger of being buried under the accumulation of text-books; not only the whole field of experimental science is still largely in bondage to the printed page, but the whole field of scientific observation is in danger of being cultivated through the medium of text-books which do not tend to lead the young student to nature, but offer themselves as a substitute for nature. We look indeed to natural science and natural history as the appointed means for freeing the human mind in this direction. The teacher who learns to instruct his classes by direct observation of nature will begin to apply the same principle in other departments of study. English literature, for example, will be taught less by